

CHARGE NUMBER: 2501
PROJECT TITLE: SMOKE CHEMISTRY
PROJECT LEADER: R. H. NEWMAN
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A study of the distribution of radioactivity in the smoke streams from ^{14}C caffeine added to cigarette filler has now been completed. The following results were obtained.

<u>SMOKE STREAM</u>	<u>% ACTIVITY</u>
SS Gas	13.7
MS Gas	1.2
SS Chamber Wash	14.9
MS Chamber Wash	3.3
SS TPM	30.6
MS TPM	31.8
Butt	4.3
Ash	0.2

The above data is based on tobacco consumed in smoking. An overall average of 98% of the activity was recovered compared to data obtained from filler extracted prior to smoking. Analysis by TLC of the activity on the SS pad and MS pad indicated that better than 95% was the parent ^{14}C caffeine.

The Hewlett-Packard 5880 gas chromatographs were modified to provide analog output capability to be used in interfacing the H.P.'s with the new lab computer system.

Tomographic reconstructions were performed on a cigarette coal that had been extinguished with N_2 . It appears to be feasible to map to shape of the coal and the relative amount of carbon by reconstructing the cross sections at various positions through the coal.

A computer program is being written to measure the luminance levels in the IR image and to then convert this information to the temperature distributions. This will allow computer analysis of the image with greater flexibility and accuracy without having to rely completely on the limited analysis capabilities of the IR camera itself.

Seven drums of rad waste were collected, packaged according to NRC regulations, and have now been shipped to the disposal site.

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